STANDARDS DEVELOPMENT BRANCH OMOE
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# REPORT ON AIR QUALITY SURVEY IN CORNWALL

(August 9–August 13, 1976)

ARB-TDA Report No. 36-77

JANUARY 1977

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Ontario Ministry of the Environment

The Honourable
George A. Kerr, Q.C.,
Minister

K.H. Sharpe,
Deputy Minister

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AIR RESOURCES BRANCH

TECHNOLOGY DEVELOPMENT & APPRAISAL SECTION
MONITORING & INSTRUMENTATION DEVELOPMENT UNIT

ARB-TDA Report No. 36-77

# REPORT ON AIR QUALITY SURVEY IN CORNWALL

(August 9 - August 13, 1976)

Ontario Ministry of the Environment
Air Resources Branch
880 Bay Street
Toronto, Ontario

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01. SUMMARY

The results of the survey show that -

1) Mercury concentrations sampled 5 metre downwind and from the immediate surface of the sludge pile are below 5 ug $m^{-3}$.

2) Mercury concentrations in the immediate vicinity of the old cells pile exceed significantly 5 ug $m^{-3}$, with 30 min. average concentrations as high as 42 ug $m^{-3}$, however, the concentrations decreased very fast with increased distance.

3) The Mercury retort is a significant source of Mercury. Highest Mercury emissions take place when the retort is refilled. Concentrations approximately 5 metres downwind exceed significantly the level of 5 ug $m^{-3}$ with 30-min average concentration as high as 28 ug $m^{-3}$. With proceeding distillation the Mercury concentrations in ambient air decrease, however, during the operation they never dropped below the level of 5 ug $m^{-3}$.

4) No significant Mercury concentrations were found in the vicinity of the caustic receiver and storage tanks,

5) Air vented from the cell rooms contained from 19 to 26 ug Hg $m^{-3}$ (30 min. average). There is no significant difference in concentration between the samples taken from the window and from the roof monitor.

6) The 30 minute average Mercury concentrations on the site perimeter in the immediate vicinity of the plant were well below the limit of 5 ug $m^{-3}$ (30 min. average).

7) No levels significantly above the usual background of 20-50 ng $m^{-3}$ were recorded at the city dump.

02. RECOMMENDATIONS

It is recommended:

i) Permanent stations for monitoring of Mercury should be established in the surrounding of the plant. Mercury should be monitored in each station on regular bases at least once a week over 24 hours. As of today the silver amalgamation technique with subsequent flameless atomic absorption or equivalent is recommended. The monitoring programme should be run for extended period of time, evaluated in regular intervals and any necessary changes incorporated.

The following locations are recommended for monitoring:

a) The Water Treatment Plant of Cornwall - 0.17 km and 250° from the cell room.

b) Close to the intersection of Brookdale Ave. and 2nd St. - 0.6 km and 140° from the cell room.

c) Brookdale Ave., opposite to the CIL maingate - 0.4 km and 100° from the Mercury retort.

ii) It should be requested that CIL install a continuous multi-point Mercury monitoring system to monitor emission of Mercury from various potential sources. Emitted concentrations and the emission rates should be reported on regular bases to the District Office.

iii) The maintenance of the Mercury retort should be done in regular intervals to prevent accidents (plugging of condenser, etc.).

## 03. INTRODUCTION

This survey and its timing was initiated by the South-Eastern Region so that it would coincide with the source testing programme of Environment Canada.

## 04. SOURCE DESCRIPTION

For source description see the MS Report No. OR-4 of the Environment Canada or Report ARB-TDA-06-75 of Environment Ontario.

## 05. MONITORING METHOD

A mobile monitoring unit was used to monitor the emissions from both plants. It is built in a Ford-Econoline E-200 van, with a raised roof and analysers permanently installed for monitoring of Sulfur Dioxide, Carbon Monoxide, Hydrogen Sulfide, Total Hydrocarbons, Nitric Oxide, Nitric Dioxide, Oxides of Nitrogen and Mercury. Analyser outputs are displayed and recorded on a 6-channel recorder and/or connected to a Hewlett-Packard Data Acquisition System, and recorded on a punch tape. Accumulated data are evaluated later by a computer system. The station has its own 3.5 KW power supply or it can be connected to any available external power source when it is in a permanent position.

Following assessment of wind direction and speed, the approximate location of maximum ground level concentration of pollutants was established and air monitoring began at this point. Monitoring was done for at least a 30-min. period and whenever possible, monitoring farther downwind of the source was also carried out.

## 06. ANALYTICAL TECHNIQUE

### Sample Collection

The air sample was taken by a plastic probe from a point approximately 5 metres above the ground level and drawn through a manifold with a flow-rate of approximately 300 liter/min. Each analyser was connected to the manifold by its own sampling line of minimum length with the exception of the Mercury vapour analyser, where the whole volume was drawn through the cell. This arrangement ensured minimum response delay as well as little or no contamination by vehicular traffic or adsorption and desorption processes in the probe.

For source monitoring the probe was connected by a flexible PVC hose of sufficient length to a funnel of approximate opening of 4 sq. feet, which was inserted into the source (roof monitors) or put on top of the source (brine cooler).

### Analysis

The "Scintrex" Mercury Vapour Analyser was used for the detection and determination of Mercury. It is a U.V. spectrofotometer with a light path of approximately 10 metres measuring the absorbtion of the $2537^{\circ}_{A}$ Mercury line. Due to some special features (Zeeman effect), the sensitivity for Mercury is very high ($5.10^{-9}$ g/m$^3$) and the cross sensitivities to interferring compounds are highly suppressed (1:300,000 for $SO_2$, 1:5,000,000 for $C_6H_6$.

The instrument was calibrated during the survey by air saturated by Mercury.

## 07. METEOROLOGICAL CONDITIONS

Meteorological conditions during this survey were not measured because all meteorological equipment was in use in another survey. The meteorological data reported in Table A were extracted from the MOE station #56065 at Cornwall water filtration plant. Warm, dry weather with light SW winds which prevailed during the survey was favourable to most of the monitorings.

TABLE A

METEOROLOGICAL CONDITIONS - CORNWALL

| DATE | | HOUR | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Aug. 9/76 | Wind Direction (o) | 54 | 331 | 314 | 311 | 281 | 268 | 258 | 260 | 259 | 254 | 264 | 284 | 217 | 286 | 299 | 295 | 328 | 48 | 90 | 94 | 65 | 1 | 31 | 47 |
| | Wind Speed (km/h) | 3.2 | 1.6 | 3.2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 3.2 | 1.6 | 1.6 | 3.2 | 1.6 | 3.2 | 3.2 | 1.6 | 1.6 | 3.2 | 3.2 | 1.6 | 1.6 | 1.6 | 1.6 | 3.2 |
| | Temperature (°C) | | | | | | | 17.2 | | | | | | | | | | | 23.3 | | | | | | |
| Aug. 10/76 | Wind Direction (o) | 24 | 16 | 30 | 25 | 20 | 7 | 12 | 4 | 359 | 331 | 318 | 306 | 294 | 290 | 310 | 324 | 332 | 226 | 259 | 252 | 220 | 236 | 239 | 240 |
| | Wind Speed (km/h) | 3.2 | 3.2 | 1.6 | 6.4 | 8 | 6.4 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 4.8 | 4.8 | 4.8 | 4.8 | 3.2 | 3.2 | 3.2 | 1.6 | 1.6 | 3.2 | 8 | 9.6 | 9.6 |
| | Temperature (°C) | | | | | | | 17.2 | | | | | | | | | | | 26.6 | | | | | | |
| Aug. 11/76 | Wind Direction (o) | 244 | 241 | — | — | — | — | — | 222 | 252 | 248 | 223 | 227 | 241 | 246 | 253 | 251 | 224 | 229 | 224 | 229 | 230 | 216 | 212 | 228 |
| | Wind Speed (km/h) | 6.4 | 8 | 6.4 | — | — | — | — | 6.4 | 4.8 | 6.4 | 3.2 | 3.2 | 4.8 | 4.8 | 4.8 | 3.2 | 1.6 | 1.6 | — | — | — | — | 3.2 | 1.6 |
| | Temperature (°C) | | | | | | | 16.6 | | | | | | | | | | | 28.3 | | | | | | |
| Aug. 12/76 | Wind Direction (o) | 218 | 227 | 218 | 217 | 217 | — | — | — | — | 212 | 215 | 222 | 222 | 218 | 211 | 214 | 212 | 223 | 218 | 222 | 221 | 248 | 233 | 226 |
| | Wind Speed (km/h) | 1.6 | — | — | 1.6 | 3.2 | — | — | — | — | 12.8 | 12.8 | 16 | 19.2 | 16 | 11.2 | 4.8 | 4.8 | 9.6 | 12.8 | 11.2 | 12.8 | 12.8 | 8 | 8 |
| | Temperature (°C) | | | | | | | 17.7 | | | | | | | | | | | 27.2 | | | | | | |
| Aug. 13/76 | Wind Direction (o) | 235 | 226 | 221 | 223 | 223 | 229 | 232 | 232 | 221 | 212 | 196 | 338 | 232 | 209 | 196 | 218 | 228 | 227 | 240 | 163 | 286 | 296 | 241 | 230 |
| | Wind Speed (km/h) | 3.2 | 8 | 6.4 | 4.8 | 1.6 | 3.2 | 1.6 | 4.8 | 4.8 | 6.4 | 1.6 | 4.8 | 1.6 | 0 | 1.6 | 0 | 3.2 | 4.8 | 0 | 0 | 0 | 0 | 0 | 1.6 |
| | Temperature (°C) | | | | | | | 20 | | | | | | | | | | | 22.2 | | | | | | |
| | Wind Direction (o) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Wind Speed (km/h) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Temperature (°C) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Wind Direction (o) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Wind Speed (km/h) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Temperature (°C) | | | | | | | | | | | | | | | | | | | | | | | | |

## 08. SAMPLING SITES

Each table and graph contain in the heading the description of the sampling site with the distance and direction from the source. All the sampling sites are listed in Table B.

Table B

List of Sampling Sites

| Sampling Site # | Description |
|---|---|
| 1 | On 2nd St. between the International Bridge and railway crossing, 0.48 km, 135° from CIL. |
| 2 | 6m SE of the Mercury retort. |
| 3 | SE corner of the old cells stock pile. |
| 4 | SE corner of the sludge pile. |
| 5 | 0.5m from the East cell room window between two vents. |
| 6 | From the vent of the East cell room window. |
| 7 | From the inside of the cell room South roof monitor. |
| 8 | Exhausts from the top of the brine cooler. |
| 9 | 5m E of the Mercury retort during start-up. |
| 10 | On Brookdale Ave. 70m N of the CIL main gate, 0.49 km, 30° from CIL. |
| 11 | 5m NE of the Mercury retort during operation. |
| 12 | From the inside of the cell room South roof monitor. |
| 13 | From the inside of the cell room South roof monitor. |
| 14 | 5m NE of the Mercury retort during refilling. |
| 15 | From the inside of the cell room South roof monitor. |
| 16 | At #341 Brookdale Ave., 0.49 km, 90° from CIL. |
| 17 | At #345 Brookdale Ave., 0.49 km, 850 from CIL. |

## 09. RESULTS

All results of the survey are reported in Table 1 to 17 as running 30 min. averages. The statistical data at the end of each table contain the maximum and minimum instantaneous concentrations recorded during monitoring and the arithmetic and geometric means and standard deviation.

All results are reported in ug $Hg/m^3$ of air and the printout is in scientific notation.

For better understanding of the monitored levels some of the calculated 30-min. averages are plotted in Figure 1 to 10 together with the maximum and minimum levels for a given 30-min. period.

## 10. DISCUSSION

During monitoring of the fumes from the top of the brine cooler (Location #8) the filter of the Mercury vapour analyser was contaminated by some substance present in the fumes. After this survey there were observed substantially lower values of Mercury which could not be explained. It was found out only after monitoring in Location 15A that the particulate matter filter was contaminated and this was immediately corrected. According to the test with the contaminated filter all results for locations 8 to 15A are approximately 50-70% too low. At any rate the results were included in the report because even with this malfunctioning of the filter, the monitored data did exceed often concentration of 5 ug Hg $m^{-3}$ (30 min. average) and some conclusions could be drawn from the slope of the registered concentration curve.

IN-PLANT MONITORING (Sampling sites #3,4)

A) Saturator and Clarifier Sludge Pile and Old Cells Storage

The sludge pile and the storage area of old cells are both located in the NE corner of the plant.

The 30 min. average concentrations approximately 5m downwind from the sludge pile were very low and only air sampling from the immediate surface of the pile revealed higher Mercury levels (Table 4) which were still significantly below 5 ug $m^{-3}$.

Mercury concentrations downwind of the old cells

pile were also below 5 ug $m^{-3}$, however, closer to the pile the concentrations rapidly increased and when sampling the face of the pile, 30 min. average concentrations of up to 42 ug Hg $m^{-3}$ were recorded (Table 3 and Fig. 2). This suggests that the old cells are still contaminated by Mercury.

B) Mercury Retort (Sampling Sites #2,9.14)

On August 9 and 10 the Mercury retort was shut down for repairs. The 30-min. average concentrations monitored during this period were up to 12 ug $m^{-3}$ (Table 2 and Fig. 1, Table 9 & Fig. 6).

Monitoring was repeated during the start-up (Table 9 and Fig. 6), operation (Table 14 and Fig. 9) and recharging of the retort (Table 14 and Figure 9). Although the results are probably significantly lower (approximately 50-70%) than actual, due to the malfunction of the dust filter, they proved that the Mercury concentrations increased significantly during the operation. Before refilling of the retort on August 11, 1976 the 30 min. average Mercury concentrations were between 10-12 ug $m^{-3}$ (Table 9 and Fig. 6). The cool retort was refilled between 17:07 and 17:14 hours and fired up at 17:20 hours. After 19:00 hours the Mercury concentration in ambient air begun to increase and close to 20:00 hours reached 30 min. average concentration of 29 ug $m^{-3}$. Next day, August 12, 1976 in the afternoon the monitored 30 min. average concentrations were slightly above 10 ug $m^{-3}$ (Table 11 and Fig. 7), probably because the Mercury distillation was already finished. However, during refilling of the hot retort, as soon as

the retort was opened at 18:32 the monitored instantaneous concentrations jumped up to over 40 ug $m^{-3}$ and as the retort was closed at 18:45 they slowly drifted down to 10-15 ug $m^{-3}$. The 30 min. average concentrations during refilling of the hot retort went up to 20 ug $m^{-3}$.

C) Caustic Receiver and Storage Area

The area of the caustic receiver and storage tanks were surveyed during filling operation and when it was not in operation. No significant concentrations of Mercury were recorded.

D) Cell Room Areas

On several occasions air from the cell room was monitored (Surveys #5, 6, 7, 12, 13, 15).

In Survey #5 (Table 5 and Fig. 3) the probe was located approximately 0.5 m from the open vent in the east side cell room window. The 30-min average concentrations varied from 5 ug $m^{-3}$ to 8.5 ug $m^{-3}$ with instantaneous minimum concentration as low as 0.8 ug $m^{-3}$ and maximum concentration as high as 15.7 ug $m^{-3}$. After the probe was placed into the vent (Table 6 and Fig. 4) the 30 min. average concentrations of Mercury increased and varied between 22.8 ug $m^{-3}$ and 24 ug $m^{-3}$ with instantaneous minimum concentration as low as 9.2 ug $m^{-3}$ and maximum concentrations as high as 33.3 ug $m^{-3}$.

The cell room South roof monitor was monitored on several occasions (Surveys #7, 13, 14, 16). The surveys #13 and #14 were not considered valid for the discussion because the Mercury Vapour Analyser filter malfunctioned.

During sampling the probe was dipped inside to the lower edge of the South roof monitor. There was no significant change in Mercury concentration, regardless of where the probe was placed in the monitor. In survey #7 (Table 7 and Fig. 5) the 30-min average concentrations of Mercury were from 20 ug $m^{-3}$ to 26.2 ug $m^{-3}$ with instantaneous minimum concentration as low as 15.2 ug $m^{-3}$ and maximum concentration as high as 29.6 ug $m^{-3}$.

In survey #16 (Table 15 and Fig. 9) the 30 min. average concentration varied between 14.9 ug $m^{-3}$ and 22.8 ug $m^{-3}$ with instantaneous minimum concentration as low as 6.3 ug $m^{-3}$ and maximum concentration as high as 36 ug $m^{-3}$.

The results suggest that -

a) The Mercury concentration in the immediate proximity of the cell rooms is significantly lower than in the cell room.

b) Mercury vapour is probably uniformly distributed over the whole space of the cell room.

c) No significant difference in Mercury concentration was observed regardless of where the probe was placed in the monitor.

d) The 30-min average Mercury concentration in the air vented from the cell room during monitoring was between 15 ug $m^{-3}$ and 23 ug $m^{-3}$ with the instantaneous concentrations varying from 6.3 ug $m^{-3}$ to 33 ug $m^{-3}$.

E) Brine Cooler (Sampling Site #8)

The emissions from the brine cooler were sampled by the probe placed on top of the exhaust of the brine cooler.

Results from this monitoring are reported in Table 8, however, these results are influenced by the contamination of the instrument filter, which happened during this monitoring and true values may be 100-150% higher.

AMBIENT AIR MONITORING

F) Site Perimeter (Sampling Sites #1, 10, 16,17)

Monitoring of the CIL site perimeter was done on the 2nd Street and Brookdale Ave. (Tables 1, 10, 16, 17). The maximum recorded 30-min average Mercury concentration was 1.1 ug $m^{-3}$ and the maximum instantaneous value was 1.9 ug $m^{-3}$.

G) City Dump

Mercury concentration was between 20 to 70 $ng/m^3$ at the site perimeter of the City Dump. Few samples taken from the immediate surface of the dump were also within the limits of the background level.

Table 1

CORNWALL V #1

DATE: AUG 10 1976
SCAN TIME: 60 SEC
AVERAGING TIME: 15 MIN
LOCATION: 2ND ST, BETWEEN BRIDGE & RR CROSSING; .48KM, 135 DEG FROM CIL

| TIME | HG |
|---|---|
| 12:15----12:30 | 1.093E+00 |
| 12:16----12:31 | 1.112E+00 |
| 12:17----12:32 | 1.096E+00 |
| 12:18----12:33 | 1.103E+00 |
| 12:19----12:34 | 1.074E+00 |
| 12:20----12:35 | 1.037E+00 |
| 12:21----12:36 | 1.003E+00 |
| 12:22----12:37 | 9.762E-01 |
| 12:23----12:38 | 9.356E-01 |
| 12:24----12:39 | 9.329E-01 |
| 12:25----12:40 | 8.973E-01 |
| 12:26----12:41 | 8.914E-01 |
| 12:27----12:42 | 9.216E-01 |
| 12:28----12:43 | 9.320E-01 |
| 12:29----12:44 | 9.096E-01 |

STATISTICS

NUMBER OF READINGS 29

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 3.400E-01 | 1.511E+00 | 9.838E-01 | 3.261E-01 | 9.239E-01 | 1.463E+00 |

Table 2

CORNWALL V #2

DATE: AUG 10 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: 6M SE OF MERCURY RETORT...SAMPLING THROUGH PROBE

| TIME | HG |
|---|---|
| 16:07----16:37 | 1.190E+01 |
| 16:08----16:38 | 1.025E+01 |
| 16:09----16:39 | 9.265E+00 |
| 16:10----16:40 | 8.364E+00 |
| 16:11----16:41 | 7.119E+00 |
| 16:12----16:42 | 6.349E+00 |
| 16:13----16:43 | 6.360E+00 |
| 16:14----16:44 | 4.881E+00 |
| 16:15----16:45 | 3.772E+00 |
| 16:16----16:46 | 3.341E+00 |
| 16:17----16:47 | 3.086E+00 |
| 16:18----16:48 | 2.953E+00 |
| 16:19----16:49 | 2.707E+00 |
| 16:20----16:50 | 2.687E+00 |
| 16:21----16:51 | 2.370E+00 |
| 16:22----16:52 | 2.286E+00 |
| 16:23----16:53 | 2.227E+00 |
| 16:24----16:54 | 2.250E+00 |
| 16:25----16:55 | 2.331E+00 |
| 16:26----16:56 | 2.356E+00 |
| 16:27----16:57 | 2.283E+00 |
| 16:28----16:58 | 2.271E+00 |
| 16:29----16:59 | 2.205E+00 |
| 16:30----17:00 | 2.220E+00 |

STATISTICS

NUMBER OF READINGS 106

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 1.000E-06 | 5.289E+01 | 7.656E+00 | 1.317E+01 | 2.386E+00 | 1.122E+01 |

Table 3

CORNWALL V #3

DATE: AUG 10 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: SE CORNER OLD CELL STOCK PILE

| TIME | HG |
|---|---|
| 17:50----18:20 | 2.329E+01 |
| 17:51----18:21 | 2.412E+01 |
| 17:52----18:22 | 2.521E+01 |
| 17:53----18:23 | 2.547E+01 |
| 17:54----18:24 | 2.631E+01 |
| 17:55----18:25 | 2.743E+01 |
| 17:56----18:26 | 2.754E+01 |
| 17:57----18:27 | 2.896E+01 |
| 17:58----18:28 | 2.906E+01 |
| 17:59----18:29 | 3.056E+01 |
| 18:00----18:30 | 3.047E+01 |
| 18:01----18:31 | 3.142E+01 |
| 18:02----18:32 | 3.134E+01 |
| 18:03----18:33 | 3.248E+01 |
| 18:04----18:34 | 3.368E+01 |
| 18:05----18:35 | 3.446E+01 |
| 18:06----18:36 | 3.525E+01 |
| 18:07----18:37 | 3.632E+01 |
| 18:08----18:38 | 3.753E+01 |
| 18:09----18:39 | 3.803E+01 |
| 18:10----18:40 | 3.909E+01 |
| 18:11----18:41 | 4.011E+01 |
| 18:12----18:42 | 4.128E+01 |
| 18:13----18:43 | 4.171E+01 |
| 18:14----18:44 | 4.243E+01 |
| 18:15----18:45 | 4.191E+01 |
| 18:16----18:46 | 4.189E+01 |
| 18:17----18:47 | 4.179E+01 |
| 18:18----18:48 | 4.048E+01 |
| 18:19----18:49 | 3.983E+01 |

STATISTICS

NUMBER OF READINGS 119

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 3.804E+00 | 6.427E+01 | 3.141E+01 | 1.819E+01 | 2.497E+01 | 2.112E+00 |

**Table 4**

CORNWALL V #4

DATE: AUG 10 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: SE CORNER OF SLUDGE PILE

| TIME | HG |
|---|---|
| 19:21----19:51 | 2.914E-01 |
| 19:22----19:52 | 3.113E-01 |
| 19:23----19:53 | 3.453E-01 |
| 19:24----19:54 | 3.656E-01 |
| 19:25----19:55 | 3.847E-01 |
| 19:26----19:56 | 3.989E-01 |
| 19:27----19:57 | 4.120E-01 |
| 19:28----19:58 | 4.252E-01 |
| 19:29----19:59 | 4.354E-01 |
| 19:30----20:00 | 4.379E-01 |
| 19:31----20:01 | 4.439E-01 |
| 19:32----20:02 | 4.500E-01 |
| 19:33----20:03 | 4.545E-01 |
| 19:34----20:04 | 4.578E-01 |
| 19:35----20:05 | 4.642E-01 |
| 19:36----20:06 | 4.659E-01 |
| 19:37----20:07 | 4.687E-01 |
| 19:38----20:08 | 4.704E-01 |
| 19:39----20:09 | 4.730E-01 |
| 19:40----20:10 | 4.754E-01 |
| 19:41----20:11 | 4.756E-01 |
| 19:42----20:12 | 4.768E-01 |
| 19:43----20:13 | 4.795E-01 |
| 19:44----20:14 | 4.819E-01 |
| 19:45----20:15 | 4.847E-01 |
| 19:46----20:16 | 4.827E-01 |
| 19:47----20:17 | 4.875E-01 |

STATISTICS

NUMBER OF READINGS 113

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 2.077E-01 | 1.465E+00 | 3.916E-01 | 2.296E-01 | 3.517E-01 | 1.526E+00 |

Table 5

CORNWALL V #5

DATE: AUG 11 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: CELL ROOM WINDOW, BETWEEN 2 EXHAUSTS

| TIME | HG |
|---|---|
| 10:00----10:30 | 8.565E+00 |
| 10:01----10:31 | 8.495E+00 |
| 10:02----10:32 | 8.298E+00 |
| 10:03----10:33 | 7.924E+00 |
| 10:04----10:34 | 7.671E+00 |
| 10:05----10:35 | 7.458E+00 |
| 10:06----10:36 | 7.152E+00 |
| 10:07----10:37 | 7.187E+00 |
| 10:08----10:38 | 7.064E+00 |
| 10:09----10:39 | 6.764E+00 |
| 10:10----10:40 | 6.519E+00 |
| 10:11----10:41 | 6.383E+00 |
| 10:12----10:42 | 6.211E+00 |
| 10:13----10:43 | 6.026E+00 |
| 10:14----10:44 | 5.868E+00 |
| 10:15----10:45 | 5.660E+00 |
| 10:16----10:46 | 5.519E+00 |
| 10:17----10:47 | 5.286E+00 |
| 10:18----10:48 | 5.158E+00 |
| 10:19----10:49 | 5.259E+00 |
| 10:20----10:50 | 5.360E+00 |
| 10:21----10:51 | 5.041E+00 |
| 10:22----10:52 | 5.145E+00 |
| 10:23----10:53 | 5.300E+00 |
| 10:24----10:54 | 5.679E+00 |
| 10:25----10:55 | 5.722E+00 |
| 10:26----10:56 | 5.539E+00 |
| 10:27----10:57 | 5.546E+00 |
| 10:28----10:58 | 5.402E+00 |
| 10:29----10:59 | 5.199E+00 |
| 10:30----11:00 | 5.176E+00 |

STATISTICS

NUMBER OF READINGS 121

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 8.385E-01 | 1.578E+01 | 6.839E+00 | 4.732E+00 | 5.082E+00 | 2.273E+00 |

**Table 6**

CORNWALL V #6

DATE: AUG 11 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: CELL ROOM WINDOW, (SAMPLING WITH FUNNEL)

| TIME | HG |
|---|---|
| 11:03----11:33 | 2.284E+01 |
| 11:04----11:34 | 2.292E+01 |
| 11:05----11:35 | 2.290E+01 |
| 11:06----11:36 | 2.325E+01 |
| 11:07----11:37 | 2.336E+01 |
| 11:08----11:38 | 2.359E+01 |
| 11:09----11:39 | 2.388E+01 |
| 11:10----11:40 | 2.405E+01 |
| 11:11----11:41 | 2.426E+01 |
| 11:12----11:42 | 2.425E+01 |
| 11:13----11:43 | 2.418E+01 |
| 11:14----11:44 | 2.400E+01 |
| 11:15----11:45 | 2.394E+01 |
| 11:16----11:46 | 2.378E+01 |
| 11:17----11:47 | 2.345E+01 |
| 11:18----11:48 | 2.340E+01 |
| 11:19----11:49 | 2.371E+01 |
| 11:20----11:50 | 2.369E+01 |
| 11:21----11:51 | 2.373E+01 |
| 11:22----11:52 | 2.392E+01 |
| 11:23----11:53 | 2.403E+01 |
| 11:24----11:54 | 2.398E+01 |
| 11:25----11:55 | 2.447E+01 |
| 11:26----11:56 | 2.445E+01 |
| 11:27----11:57 | 2.431E+01 |
| 11:28----11:58 | 2.435E+01 |
| 11:29----11:59 | 2.405E+01 |
| 11:30----12:00 | 2.378E+01 |
| 11:31----12:01 | 2.350E+01 |
| 11:32----12:02 | 2.305E+01 |
| 11:33----12:03 | 2.302E+01 |
| 11:34----12:04 | 2.313E+01 |
| 11:35----12:05 | 2.342E+01 |

STATISTICS

NUMBER OF READINGS 124

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 9.250E+00 | 3.332E+01 | 2.320E+01 | 4.804E+00 | 2.263E+01 | 1.263E+00 |

Table 7

CORNWALL V #7

DATE: AUG 11 1976
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: CELL ROOM ROOF VENTILATOR, (SAMPLING THROUGH FUNNEL)

| TIME | HG |
|---|---|
| 12:15----12:45 | 2.623E+01 |
| 12:20----12:50 | 2.567E+01 |
| 12:25----12:55 | 2.532E+01 |
| 12:30----13:00 | 2.516E+01 |
| 12:35----13:05 | 2.480E+01 |
| 12:40----13:10 | 2.422E+01 |
| 12:45----13:15 | 2.379E+01 |
| 12:50----13:20 | 2.359E+01 |
| 12:55----13:25 | 2.295E+01 |
| 13:00----13:30 | 2.205E+01 |
| 13:05----13:35 | 2.171E+01 |
| 13:10----13:40 | 2.177E+01 |
| 13:15----13:45 | 2.144E+01 |
| 13:20----13:50 | 2.076E+01 |
| 13:25----13:55 | 2.063E+01 |
| 13:30----14:00 | 2.052E+01 |

STATISTICS

NUMBER OF READINGS 108

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 1.524E+01 | 2.961E+01 | 2.319E+01 | 3.032E+00 | 2.299E+01 | 1.144E+00 |

**Table 8**

CORNWALL V #8

DATE: AUG 11 1976
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: ON TOP OF BRINE COOLER, (SAMPLING THROUGH FUNNEL)

| TIME | HG |
|---|---|
| 14:20----14:50 | 7.458E-01 |
| 14:21----14:51 | 7.103E-01 |
| 14:22----14:52 | 6.639E-01 |
| 14:23----14:53 | 6.471E-01 |
| 14:24----14:54 | 7.098E-01 |
| 14:25----14:55 | 6.893E-01 |
| 14:26----14:56 | 6.643E-01 |
| 14:27----14:57 | 6.260E-01 |
| 14:28----14:58 | 5.934E-01 |
| 14:29----14:59 | 5.589E-01 |
| 14:30----15:00 | 5.207E-01 |
| 14:31----15:01 | 5.082E-01 |
| 14:32----15:02 | 4.756E-01 |
| 14:33----15:03 | 5.032E-01 |
| 14:34----15:04 | 4.602E-01 |
| 14:35----15:05 | 4.311E-01 |
| 14:36----15:06 | 4.902E-01 |
| 14:37----15:07 | 4.907E-01 |
| 14:38----15:08 | 5.096E-01 |
| 14:39----15:09 | 5.299E-01 |
| 14:40----15:10 | 5.661E-01 |
| 14:41----15:11 | 6.115E-01 |
| 14:42----15:12 | 6.660E-01 |
| 14:43----15:13 | 6.909E-01 |
| 14:44----15:14 | 7.081E-01 |
| 14:45----15:15 | 8.114E-01 |
| 14:46----15:16 | 8.287E-01 |
| 14:47----15:17 | 8.742E-01 |
| 14:48----15:18 | 9.343E-01 |
| 14:49----15:19 | 9.849E-01 |
| 14:50----15:20 | 1.025E+00 |
| 14:51----15:21 | 1.066E+00 |
| 14:52----15:22 | 1.103E+00 |
| 14:53----15:23 | 1.118E+00 |
| 14:54----15:24 | 1.071E+00 |
| 14:55----15:25 | 1.096E+00 |
| 14:56----15:26 | 1.144E+00 |
| 14:57----15:27 | 1.208E+00 |
| 14:58----15:28 | 1.280E+00 |
| 14:59----15:29 | 1.335E+00 |
| 15:00----15:30 | 1.366E+00 |
| 15:01----15:31 | 1.400E+00 |
| 15:02----15:32 | 1.435E+00 |
| 15:03----15:33 | 1.413E+00 |
| 15:04----15:34 | 1.453E+00 |
| 15:05----15:35 | 1.627E+00 |
| 15:06----15:36 | 1.680E+00 |
| 15:07----15:37 | 1.727E+00 |
| 15:08----15:38 | 1.702E+00 |
| 15:09----15:39 | 1.667E+00 |
| 15:10----15:40 | 1.615E+00 |
| 15:11----15:41 | 1.573E+00 |
| 15:12----15:42 | 1.544E+00 |
| 15:13----15:43 | 1.536E+00 |
| 15:14----15:44 | 1.545E+00 |
| 15:15----15:45 | 1.485E+00 |
| 15:16----15:46 | 1.528E+00 |
| 15:17----15:47 | 1.525E+00 |
| 15:18----15:48 | 1.506E+00 |
| 15:19----15:49 | 1.492E+00 |

Table 8

CORNWALL V #8, CONT'D



| TIME | HG |
|---|---|
| 15:20----15:50 | 1.486E+00 |
| 15:21----15:51 | 1.467E+00 |
| 15:22----15:52 | 1.539E+00 |
| 15:23----15:53 | 1.551E+00 |
| 15:24----15:54 | 1.545E+00 |
| 15:25----15:55 | 1.571E+00 |
| 15:26----15:56 | 1.548E+00 |
| 15:27----15:57 | 1.502E+00 |
| 15:28----15:58 | 1.479E+00 |
| 15:29----15:59 | 1.445E+00 |
| 15:30----16:00 | 1.460E+00 |
| 15:31----16:01 | 1.450E+00 |

STATISTICS

NUMBER OF READINGS 101

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 1.000E-06 | 5.218E+00 | 1.099E+00 | 8.825E-01 | 1.373E-01 | 1.483E+02 |

Table 9

CORNWALL V #9

DATE: AUG 11 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: RETORT, (DURING START UP)

| TIME | HG |
|---|---|
| 16:15----16:45 | 1.200E+01 |
| 16:20----16:50 | 1.251E+01 |
| 16:25----16:55 | 1.230E+01 |
| 16:30----17:00 | 1.198E+01 |
| 16:35----17:05 | 1.173E+01 |
| 16:40----17:10 | 1.162E+01 |
| 16:45----17:15 | 1.147E+01 |
| 16:50----17:20 | 1.132E+01 |
| 16:55----17:25 | 1.157E+01 |
| 17:00----17:30 | 1.105E+01 |
| 17:05----17:35 | 1.032E+01 |
| 17:10----17:40 | 9.830E+00 |
| 17:15----17:45 | 9.933E+00 |
| 17:20----17:50 | 9.633E+00 |
| 17:25----17:55 | 9.763E+00 |
| 17:30----18:00 | 9.880E+00 |
| 17:35----18:05 | 9.609E+00 |
| 17:40----18:10 | 1.016E+01 |
| 17:45----18:15 | 1.031E+01 |
| 17:50----18:20 | 1.052E+01 |
| 17:55----18:25 | 9.882E+00 |
| 18:00----18:30 | 9.892E+00 |
| 18:05----18:35 | 1.040E+01 |
| 18:10----18:40 | 1.044E+01 |
| 18:15----18:45 | 1.005E+01 |
| 18:20----18:50 | 1.005E+01 |
| 18:25----18:55 | 9.790E+00 |
| 18:30----19:00 | 1.009E+01 |
| 18:35----19:05 | 1.033E+01 |
| 18:40----19:10 | 1.002E+01 |
| 18:45----19:15 | 1.024E+01 |
| 18:50----19:20 | 9.823E+00 |
| 18:55----19:25 | 1.000E+01 |
| 19:00----19:30 | 9.604E+00 |
| 19:05----19:35 | 8.762E+00 |
| 19:10----19:40 | 7.483E+00 |
| 19:15----19:45 | 6.979E+00 |
| 19:20----19:50 | 9.780E+00 |
| 19:25----19:55 | 1.328E+01 |
| 19:30----20:00 | 1.742E+01 |
| 19:35----20:05 | 2.116E+01 |
| 19:40----20:10 | 2.556E+01 |
| 19:45----20:15 | 2.922E+01 |
| 19:50----20:20 | 2.947E+01 |
| 19:55----20:25 | 2.914E+01 |
| 20:00----20:30 | 2.808E+01 |
| 20:05----20:35 | 2.783E+01 |
| 20:10----20:40 | 2.796E+01 |

STATISTICS

NUMBER OF READINGS 532

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 6.062E-01 | 4.459E+01 | 1.400E+01 | 9.272E+00 | 1.118E+01 | 2.027E+00 |

Table 10

CORNWALL V #11

DATE: AUG 11 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: BROOKDALE, 70M N OF CIL MAIN GATE; .49KM, 30DEG FROM CIL

| TIME | HG |
|---|---|
| 11:25----11:55 | 1.118E-01 |
| 11:30----12:00 | 1.096E-01 |
| 11:35----12:05 | 1.023E-01 |
| 11:40----12:10 | 9.056E-02 |
| 11:45----12:15 | 8.638E-02 |
| 11:50----12:20 | 8.772E-02 |
| 11:55----12:25 | 8.690E-02 |

STATISTICS

NUMBER OF READINGS 120

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 1.843E-02 | 2.243E-01 | 9.936E-02 | 4.910E-02 | 8.514E-02 | 1.836E+00 |

Table 11

CORNWALL V #12

DATE: AUG 12 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: INSIDE RETORT, (SAMPLING THROUGH FUNNEL)

| TIME | HG |
|---|---|
| 12:35----13:05 | 1.189E+01 |
| 12:40----13:10 | 1.153E+01 |
| 12:45----13:15 | 1.083E+01 |
| 12:50----13:20 | 1.015E+01 |
| 12:55----13:25 | 1.012E+01 |
| 13:00----13:30 | 1.038E+01 |
| 13:05----13:35 | 1.021E+01 |

STATISTICS

NUMBER OF READINGS 124

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 3.382E+00 | 2.652E+01 | 1.107E+01 | 4.363E+00 | 1.029E+01 | 1.469E+00 |

Table 12

CORNWALL V #13

DATE: AUG12 1976
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: CELL ROOM ROOF VENTILATOR, (SAMPLING THROUGH FUNNEL)

| TIME | HG |
|---|---|
| 14:25----14:55 | 4.834E+00 |
| 14:26----14:56 | 4.836E+00 |
| 14:27----14:57 | 4.840E+00 |
| 14:28----14:58 | 4.500E+00 |
| 14:29----14:59 | 4.575E+00 |
| 14:30----15:00 | 4.522E+00 |
| 14:31----15:01 | 4.443E+00 |

STATISTICS

NUMBER OF READINGS 36

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 2.630E+00 | 1.369E+01 | 4.792E+00 | 1.810E+00 | 4.564E+00 | 1.350E+00 |

Table 13

CORNWALL V #14

DATE: AUG 12 1976
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: CELL ROOM ROOF VENTILATOR, (SAMPLING THROUGH FUNNEL)

| TIME | HG |
|---|---|
| 15:50----16:20 | 3.506E+00 |
| 15:55----16:25 | 3.374E+00 |
| 16:00----16:30 | 3.281E+00 |

STATISTICS

NUMBER OF READINGS 44

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 2.772E+00 | 4.585E+00 | 3.420E+00 | 3.697E-01 | 3.401E+00 | 1.109E+00 |

Table 14

CORNWALL V #15A

DATE: AUG 12 1976
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: NEXT TO RETORT, DURING OPENING

| TIME | HG |
|---|---|
| 17:40----18:10 | 6.139E+00 |
| 17:41----18:11 | 6.122E+00 |
| 17:42----18:12 | 6.028E+00 |
| 17:43----18:13 | 5.714E+00 |
| 17:44----18:14 | 5.596E+00 |
| 17:45----18:15 | 5.436E+00 |
| 17:46----18:16 | 5.521E+00 |
| 17:47----18:17 | 5.470E+00 |
| 17:48----18:18 | 5.249E+00 |
| 17:49----18:19 | 5.147E+00 |
| 17:50----18:20 | 5.063E+00 |
| 17:51----18:21 | 5.231E+00 |
| 17:52----18:22 | 6.270E+00 |
| 17:53----18:23 | 7.377E+00 |
| 17:54----18:24 | 7.669E+00 |
| 17:55----18:25 | 8.496E+00 |
| 17:56----18:26 | 9.628E+00 |
| 17:57----18:27 | 1.087E+01 |
| 17:58----18:28 | 1.181E+01 |
| 17:59----18:29 | 1.293E+01 |
| 18:00----18:30 | 1.410E+01 |
| 18:01----18:31 | 1.529E+01 |
| 18:02----18:32 | 1.625E+01 |
| 18:03----18:33 | 1.710E+01 |
| 18:04----18:34 | 1.765E+01 |
| 18:05----18:35 | 1.833E+01 |
| 18:06----18:36 | 1.879E+01 |
| 18:07----18:37 | 1.919E+01 |
| 18:08----18:38 | 1.950E+01 |
| 18:09----18:39 | 1.965E+01 |
| 18:10----18:40 | 1.963E+01 |
| 18:11----18:41 | 1.967E+01 |
| 18:12----18:42 | 1.963E+01 |
| 18:13----18:43 | 1.962E+01 |
| 18:14----18:44 | 1.962E+01 |
| 18:15----18:45 | 1.963E+01 |

STATISTICS

NUMBER OF READINGS 65

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 3.000E+00 | 4.310E+01 | 1.222E+01 | 1.194E+01 | 8.440E+00 | 2.256E+00 |

**Table 15**

CORNWALL V #16

DATE: AUG 12 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: CELL ROOM ROOF VENTILATOR, (SAMPLING THROUGH FUNNEL)

| TIME | HG |
|---|---|
| 19:25----19:55 | 1.494E+01 |
| 19:35----20:05 | 1.967E+01 |
| 19:45----20:15 | 2.216E+01 |
| 19:55----20:25 | 2.279E+01 |
| 20:05----20:35 | 1.900E+01 |
| 20:15----20:45 | 1.885E+01 |
| 20:25----20:55 | 1.952E+01 |

STATISTICS

NUMBER OF READINGS 180

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 6.296E+00 | 3.603E+01 | 1.908E+01 | 5.942E+00 | 1.821E+01 | 1.360E+00 |

Table 16

CORNWALL V #17

DATE: AUG 13 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: 341 BROOKDALE; .49KM, 90DEG FROM CIL

| TIME | HG |
|---|---|
| 09:00----09:30 | 8.660E-01 |
| 09:05----09:35 | 8.236E-01 |
| 09:10----09:40 | 7.499E-01 |
| 09:15----09:45 | 7.513E-01 |
| 09:20----09:50 | 8.019E-01 |
| 09:25----09:55 | 7.596E-01 |
| 09:30----10:00 | 6.417E-01 |

STATISTICS

NUMBER OF READINGS 124

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 1.318E-01 | 1.898E+00 | 7.360E-01 | 3.769E-01 | 6.214E-01 | 1.911E+00 |

Table 17

CORNWALL V #18

DATE: AUG 13 1976
SCAN TIME: 30 SEC
AVERAGING TIME: 30 MIN
LOCATION: 345 BROOKDALE, .49KM, 85DEG FROM CIL

| TIME | HG |
|---|---|
| 10:35----11:05 | 3.681E-01 |
| 10:40----11:10 | 3.514E-01 |
| 10:45----11:15 | 3.750E-01 |
| 10:50----11:20 | 3.913E-01 |
| 10:55----11:25 | 4.333E-01 |
| 11:00----11:30 | 4.044E-01 |

STATISTICS

NUMBER OF READINGS 117

| POLLUTANT | MINIMUM VALUE | MAXIMUM VALUE | ARITHMETIC MEAN | STANDARD DEVIATION | GEOMETRIC MEAN | GEOMETRIC STD. DEV. |
|---|---|---|---|---|---|---|
| HG | 7.520E-02 | 1.041E+00 | 3.757E-01 | 2.170E-01 | 3.096E-01 | 1.938E+00 |

# CONCENTRATION VS TIME

SURVEY: CORNWALL V #2
DATE: AUG 10 1976
SCAN TIME: 30 SEC
LOCATION: 6M SE OF MERCURY RETORT...SAMPLING THROUGH PROBE

POLLUTANT: HG
START TIME: 16:07
AVERAGING TIME: 30 MIN

Figure 1

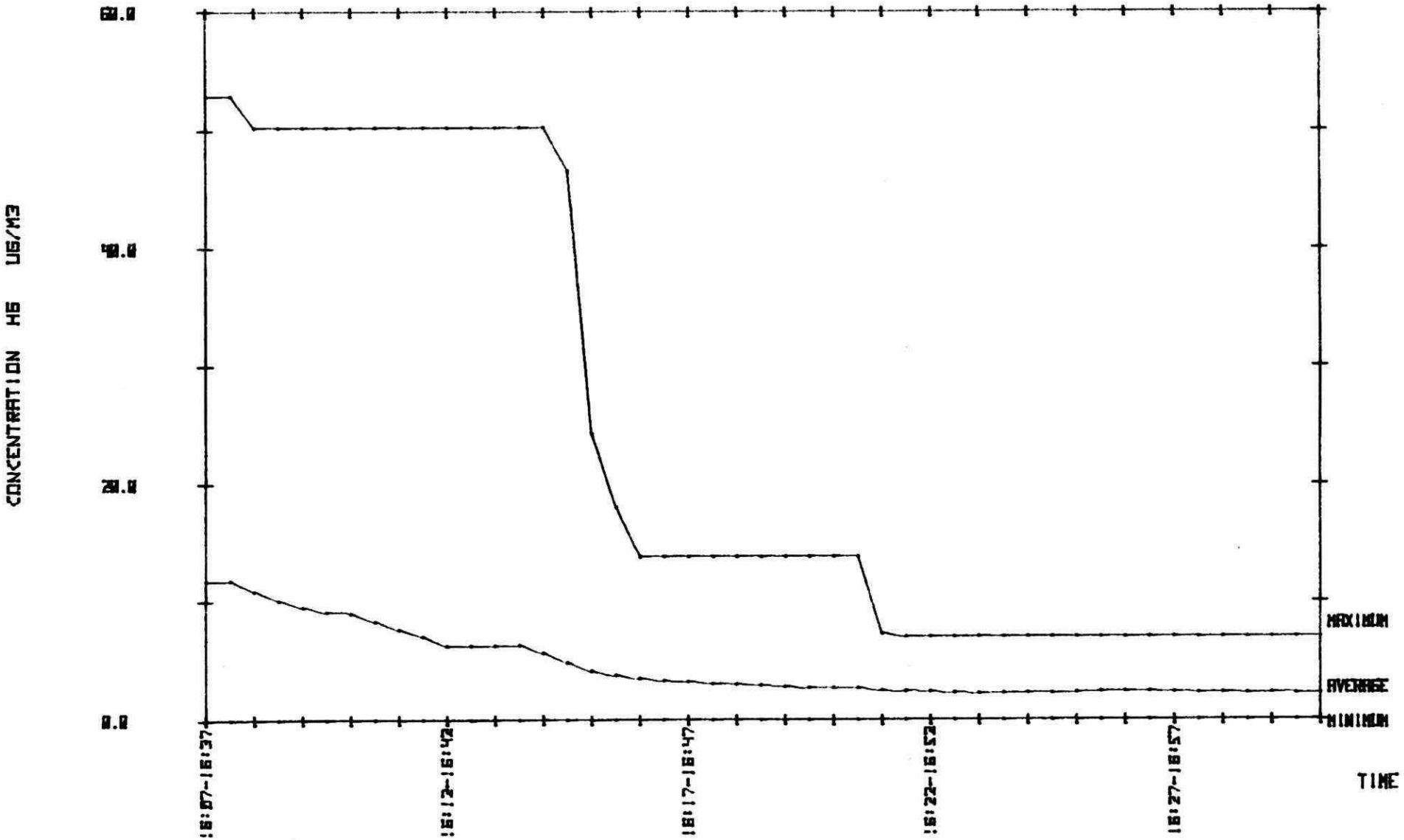
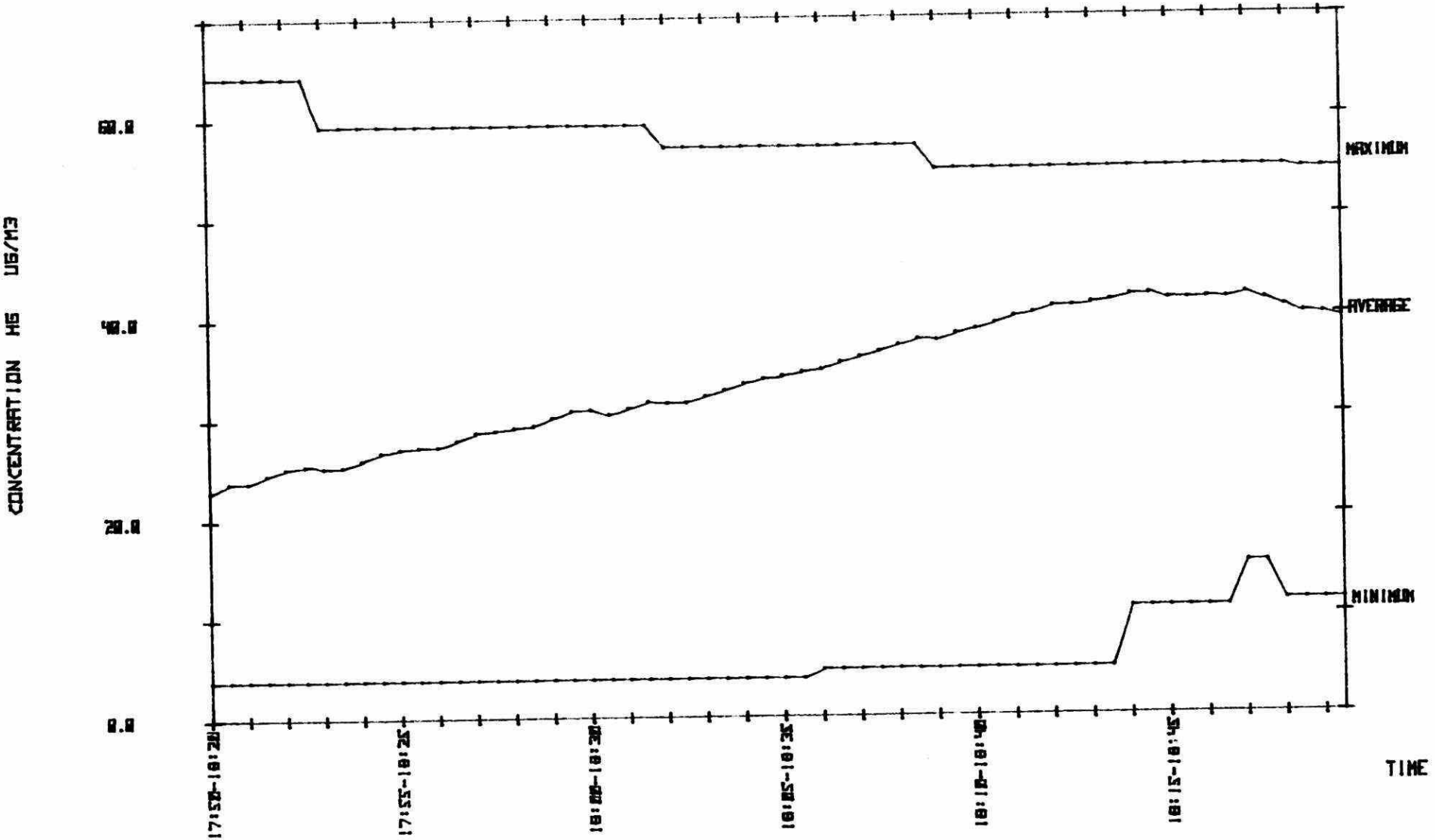


Figure 2

# CONCENTRATION VS TIME

SURVEY: CORNWALL V #3
DATE: AUG 10 1976
SCAN TIME: 30 SEC
LOCATION: SE CORNER OLD CELL STOCK PILE

POLLUTANT: H6
START TIME: 17:50
AVERAGING TIME: 30 MIN

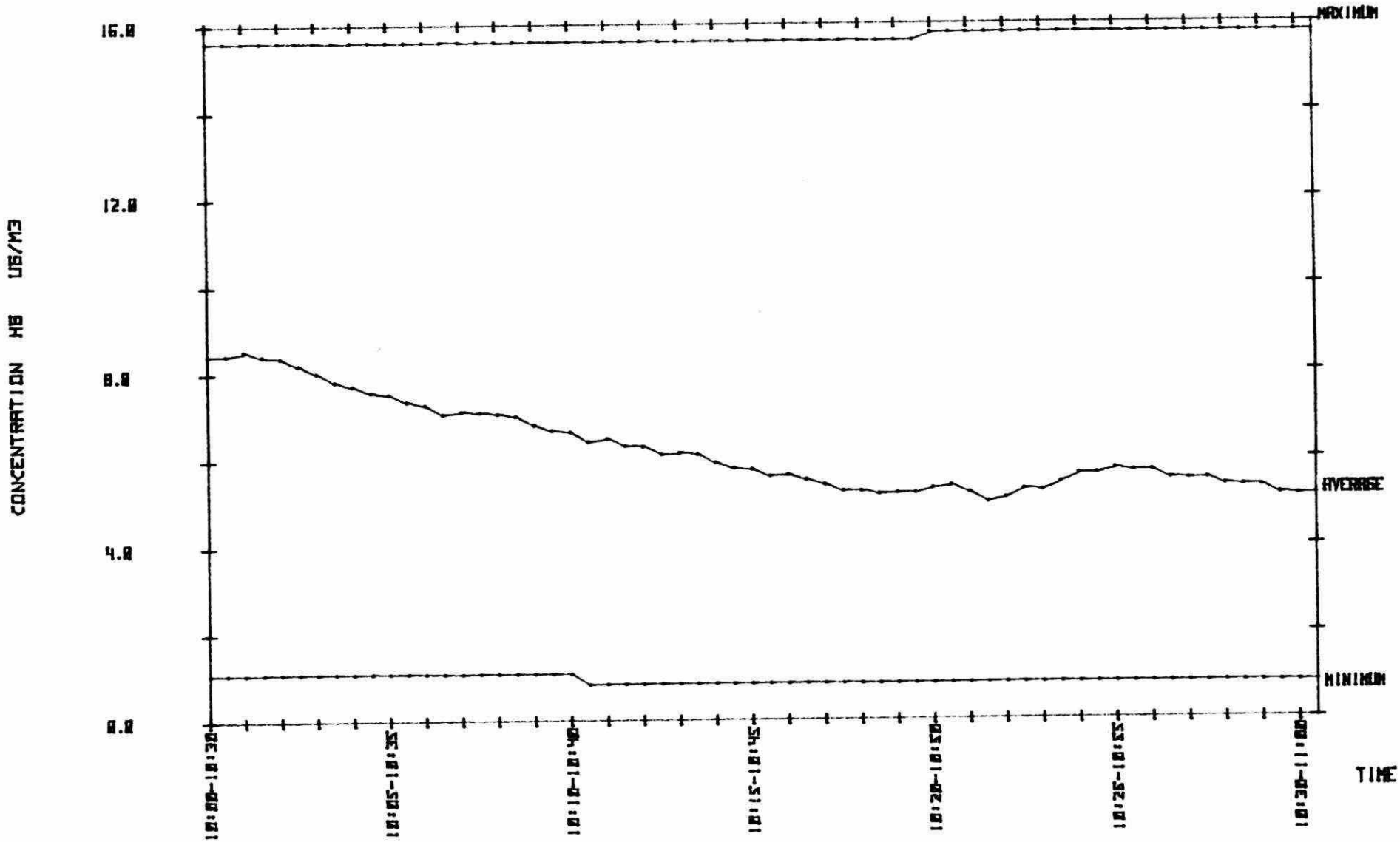


# CONCENTRATION VS TIME

SURVEY: CORNWALL V #5
DATE: AUG 11 1976
SCAN TIME: 30 SEC
LOCATION: CELL ROOM WINDOW, BETWEEN 2 EXHAUSTS

POLLUTANT: HG
START TIME: 10:00
AVERAGING TIME: 30 MIN

Figure 3

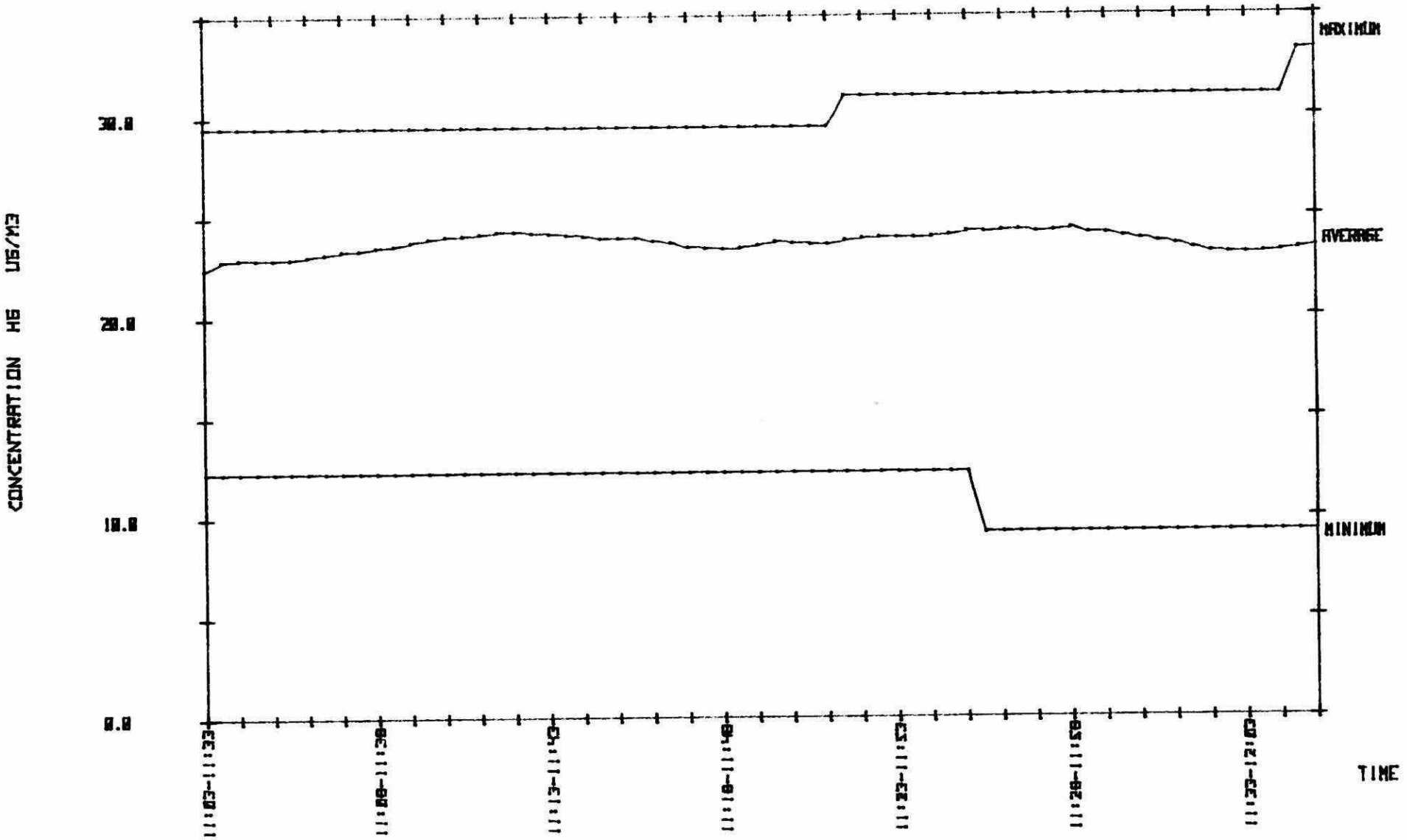


# CONCENTRATION VS TIME

SURVEY: CORNWALL V #6
DATE: AUG 11 1976
SCAN TIME: 30 SEC
LOCATION: CELL ROOM WINDOW, (SAMPLING WITH FUNNEL)

POLLUTANT: HG
START TIME: 11:03
AVERAGING TIME: 30 MIN

Figure 4

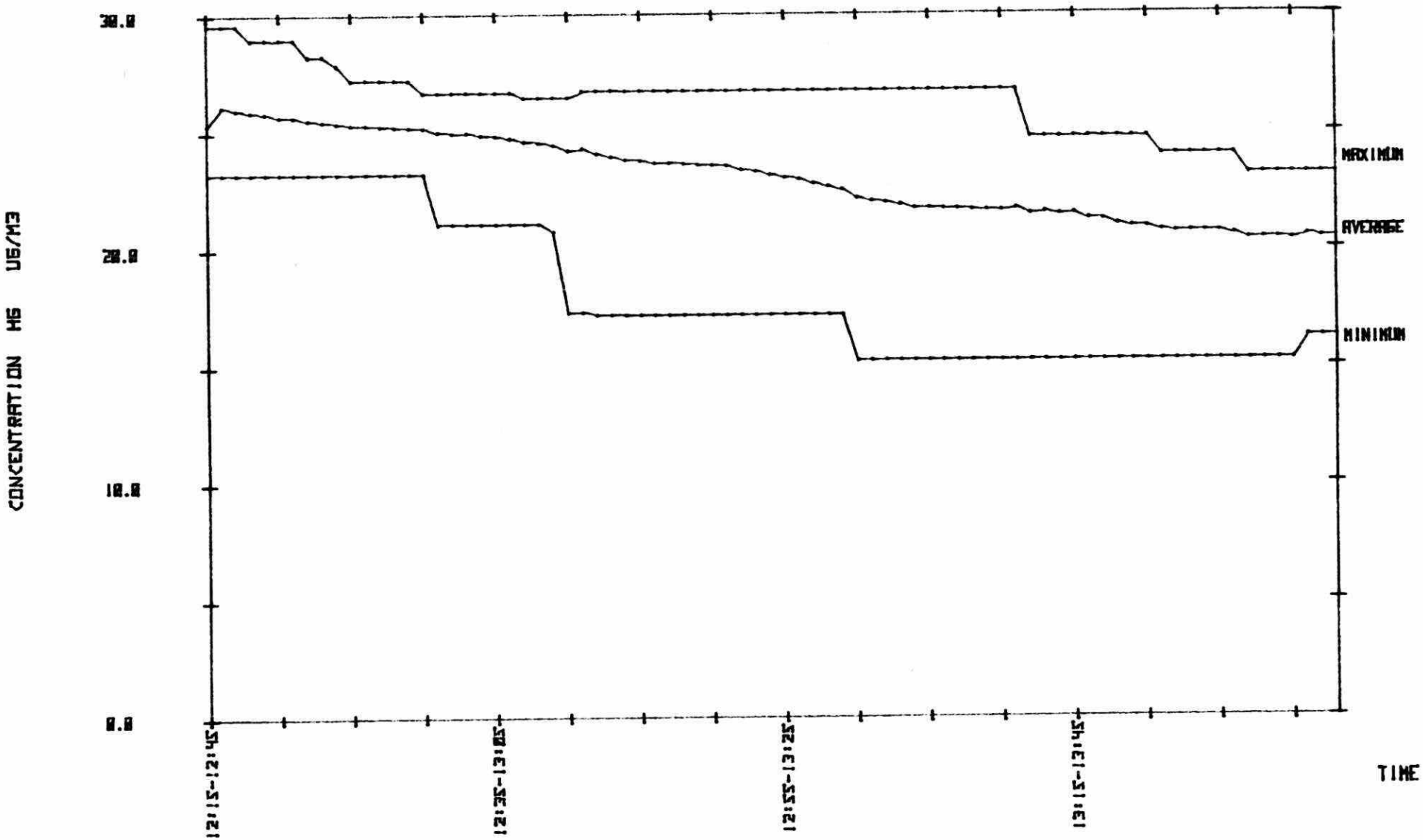


# CONCENTRATION VS TIME

SURVEY: CORNWALL V #7
DATE: AUG 11 1976
SCAN TIME: 60 SEC
LOCATION: CELL ROOM ROOF VENTILATOR, (SAMPLING THROUGH FUNNEL)

POLLUTANT: H6
START TIME: 12:15
AVERAGING TIME: 30 MIN

Figure 5

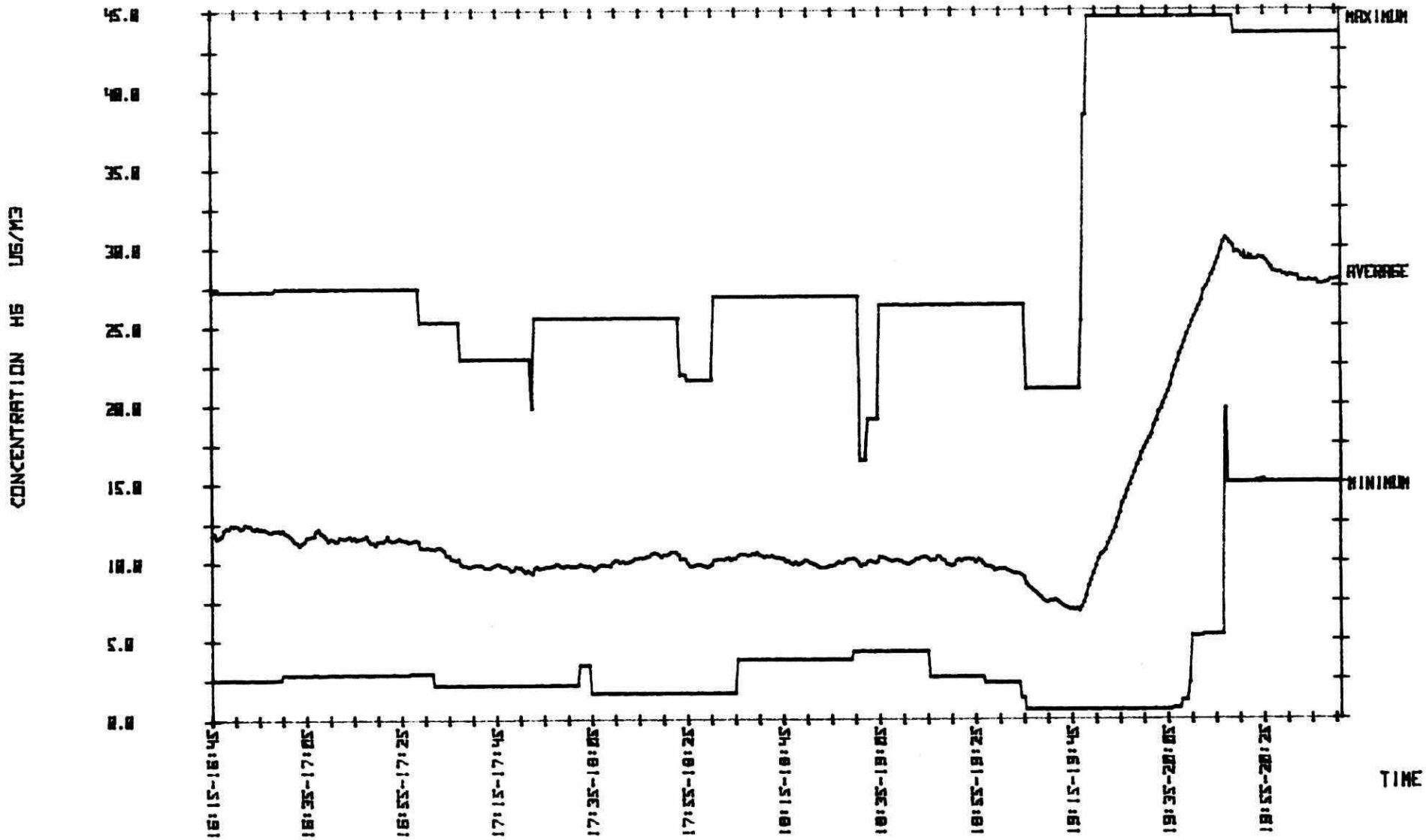


# CONCENTRATION VS TIME

SURVEY: CORNWALL V #9
DATE: AUG 11 1976
SCAN TIME: 30 SEC
LOCATION: RETORT, (DURING START UP)

POLLUTANT: HG
START TIME:16:15
AVERAGING TIME: 30 MIN

Figure 6

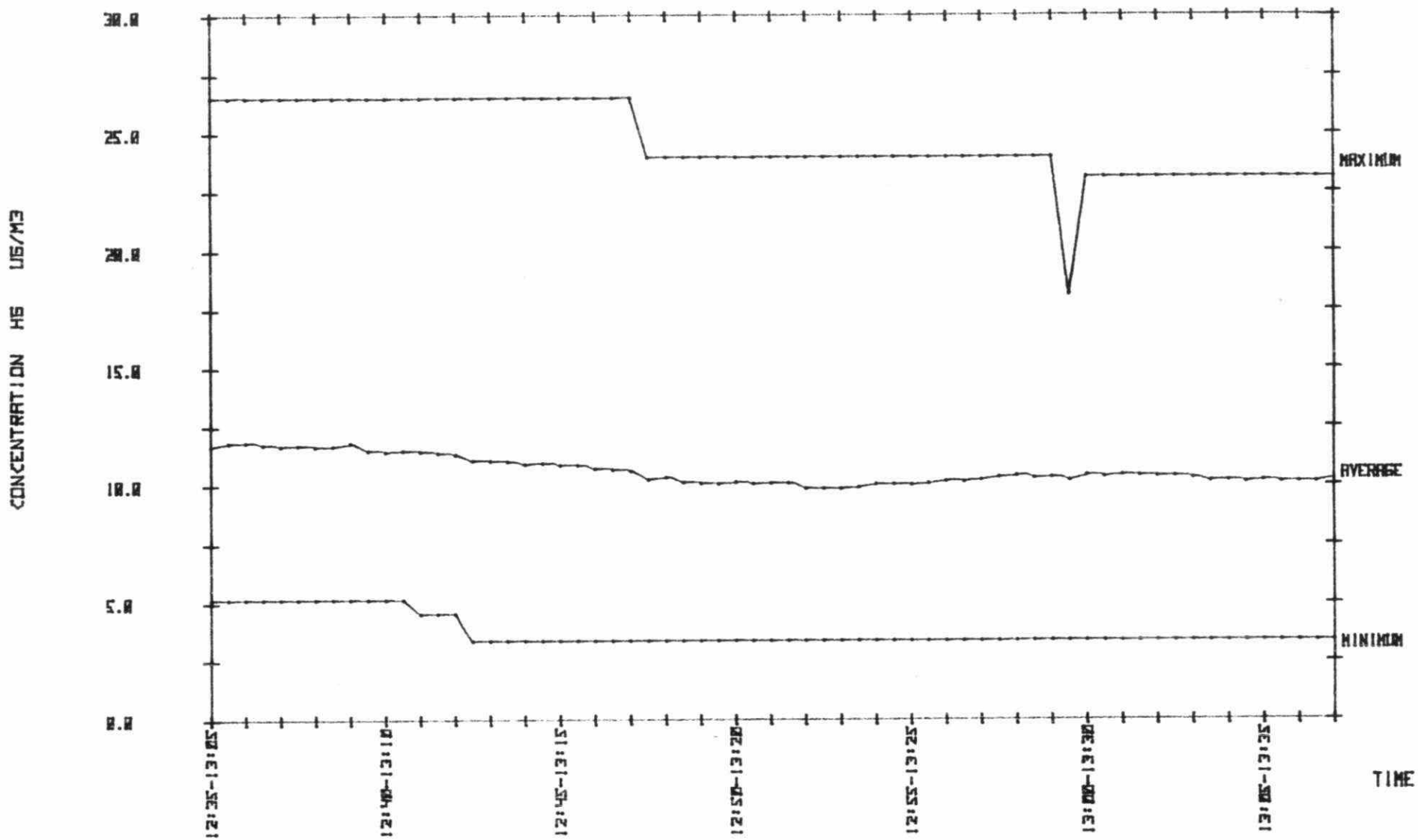


# CONCENTRATION VS TIME

SURVEY: CORNWALL V #12
DATE: AUG 12 1976
SCAN TIME: 30 SEC
LOCATION: INSIDE RETORT, (SAMPLING THROUGH FUNNEL)

POLLUTANT: HG
START TIME: 12:35
AVERAGING TIME: 30 MIN

Figure 7



# CONCENTRATION VS TIME

SURVEY: CORNWALL V #13
DATE: AUG12 1976
SCAN TIME: 60 SEC
LOCATION: CELL ROOM ROOF VENTILATOR, (SAMPLING THROUGH FUNNEL)

POLLUTANT: H6
START TIME: 14:25
AVERAGING TIME: 30 MIN

Figure 8

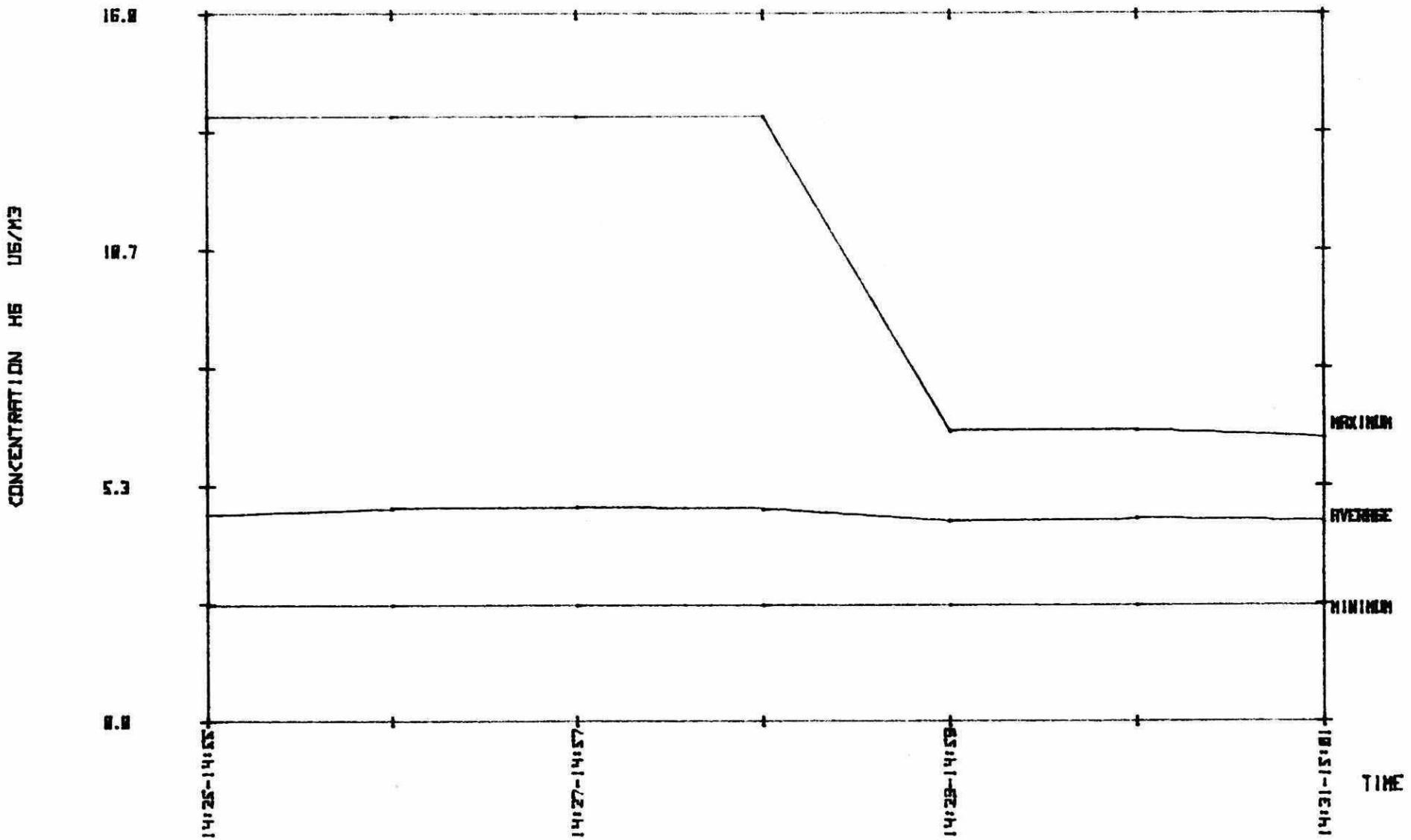


Figure 9

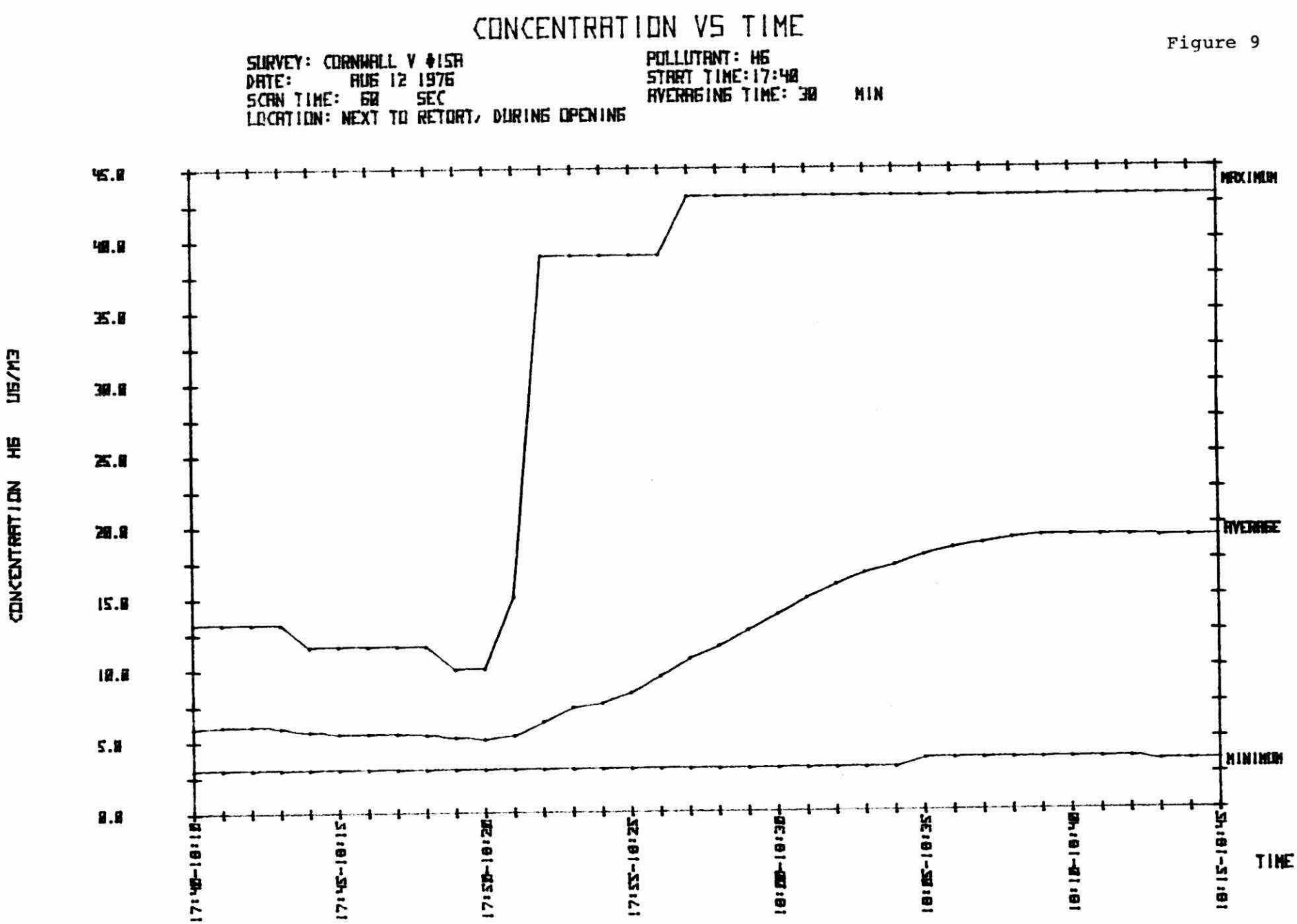
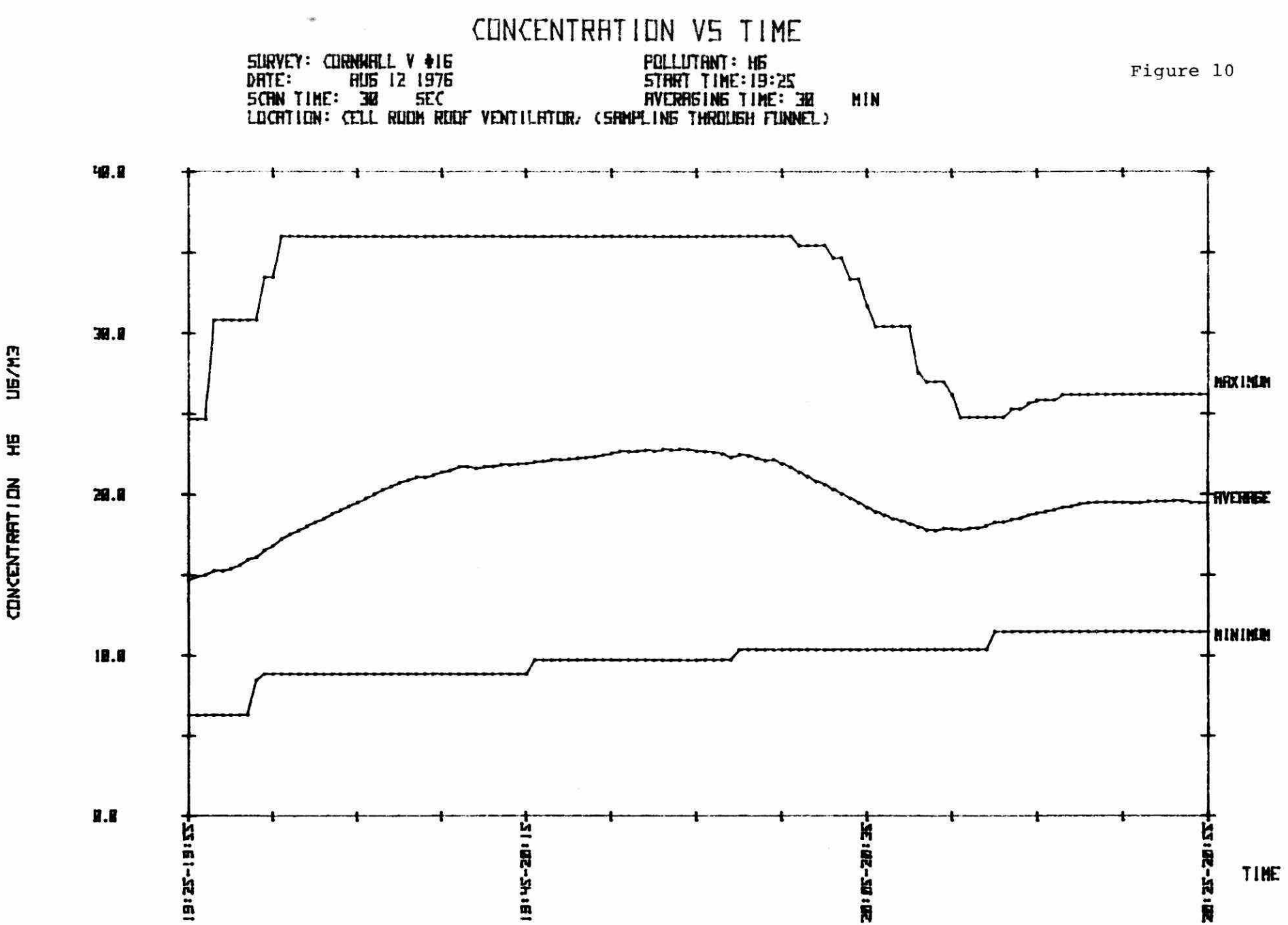

CONCENTRATION VS TIME
SURVEY: CORNWALL V #15A
DATE: AUG 12 1976
SCAN TIME: 60 SEC
LOCATION: NEXT TO RETORT, DURING OPENING
POLLUTANT: H6
START TIME: 17:40
AVERAGING TIME: 30 MIN
CONCENTRATION H6 UG/M3
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
MAXIMUM
AVERAGE
MINIMUM
17:40-18:10
17:45-18:15
17:50-18:20
17:55-18:25
18:00-18:30
18:05-18:35
18:10-18:40
18:15-18:45
TIME

Figure 10


CONCENTRATION VS TIME
SURVEY: CORNWALL V #16
DATE: AUG 12 1976
SCAN TIME: 30 SEC
LOCATION: CELL ROOM ROOF VENTILATOR/ (SAMPLING THROUGH FUNNEL)
POLLUTANT: H6
START TIME:19:25
AVERAGING TIME: 30 MIN
CONCENTRATION H6 UG/M3
40.0
30.0
20.0
10.0
0.0
MAXIMUM
AVERAGE
MINIMUM
19:25-19:55
19:45-20:15
20:05-20:35
20:25-20:55
TIME

TD
883.17
.A37
C67
1977